REMARKS

Claims 1, 3-18, and 20-35 were pending in the current application. Applicants have amended claims 4, 6, 7, 12, 13, 15, 17, 20, 22, 23, 24, 26, 29, 32, 34, and 35, and canceled claims 8 and 25. Pending claims are therefore claims 1, 3-7, 9-18, 20-24, and 26-35. Reexamination and reconsideration of all pending claims are respectfully requested.

Supplemental Information Disclosure Statement

Applicants appreciate the through review of the IDS previously submitted. Pursuant to the statements in the Office Action, Applicants file herewith a Supplemental IDS including a copy of foreign patent document EP0460862 and request consideration thereof.

Claim Objections

The Office Action objected to various claims based on certain wording employed. Applicants have amended claim 4, 7, 9, 10, 13, 15, 29, 32[1], 34, and 35 and canceled claims 8 and 25. Applicants submit that these claims are worded appropriately.

Applicants take issue with a few of the claim objections. Claim 5 is not required to be dependent from claim 4, i.e., claim 5 does not require claim 4 for support. Applicants would prefer to keep claim 5 depending from claim 1 and employ the phrase "a third stream" as currently recited. In claim 17, the word "comprises" is correct in line 2, as "comprises" grammatically agrees with "adjusting," i.e. "adjusting…comprises…" Also, rather than canceling claims 9, 20, and 22-24, Applicants have amended these claims as discussed below.

Applicants therefore submit that all claims, as amended, are worded acceptably and are in acceptable form.

[1] Claim 32 is mistakenly referenced as "claim 30" at page 4 of the Office Action.

35 U.S.C. §112

The Office Action rejected claims 9, 20, and 22-24 under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. Applicants do not specifically agree that the cited claims were not described in the specification, but have amended these claims to recite embodiments clearly provided in the specification.

For example, claim 9 has been amended to read:

> 9. The method as claimed in claim 6 [wherein a "fourth stream comprising pilot channel data" is claimed], wherein said combining the plurality of streams of modulated symbols comprises:
>
> adding the first stream of modulated symbols to the second stream of modulated symbols to provide a first added stream;
>
> adding the fourth stream to the third stream of modulated symbols to provide a second added stream; and
>
> providing said first added stream separately from the second added stream for said complex multiplying and merging said first added stream and said second added stream by said complex multiplying.

Applicants point to, for example, the embodiment of FIG. 10 in support of this claim, which includes pilot channel data and adders 408 and 419.

Claim 20 has been amended to recite:

> 20. The apparatus as claimed in claim 18, wherein said combiner comprises:
>
> a first adder configured to receive at least one stream of modulated symbols and provide a first combined stream.

Applicants point to, for example, FIGs. 4, 8, and 10 in support of this amended claim.

Claims 22-24 have also been amended to recite:

> 22. The apparatus as claimed in claim 18, wherein said combiner comprises:
>
> a first adder configured to add the first stream of modulated symbols to the second stream of modulated symbols to provide a first combined stream.
>
> 23. (Currently Amended) The apparatus as claimed in claims 21, further comprising:
>
> a pilot channel of pilot channel data.
>
> 24. (Currently Amended) The apparatus as claimed in claim 18, wherein said combiner comprises:
>
> a first adder configured to add the second stream of modulated symbols to the first stream of modulated symbols to provide a first combined stream.

Applicants submit that by these amendments, support for these claims is available in the specification. Thus all claims, as amended, are supported by the written description and satisfy 35 U.S.C. §112.

Applicants therefore submit that all claims, as amended, are supported by the written description and are sufficiently definite, and therefore satisfy 35 U.S.C. §112.

35 U.S.C. §102/103

The Office Action rejected claims 1, 3-5, 10-11, 15, 18, 20-22, 27-28, 32, and 35, including independent claims 1, 18, and 35, under 35 U.S.C. §102(e) based on Dahlman et

al., U.S. Patent No. 5,896,368 ("Dahlman"). The Office Action rejected dependent claims 6-9, 12, 14, 16-17, 23-26, 29, 31, and 33-34 under 35 U.S.C. §103 based on Dahlman in view of Gilhousen et al.,

Dahlman illustrates a design including a downlink traffic information processor (FIG. 2A) that operates to spread information within a frame. Applicants focus on claim 1 and the following limitations of claim 1:

> modulating each of a plurality of channels of data with an associated code to produce a plurality of streams of modulated symbols;
>
> ...
>
> wherein the modulating each of the plurality of channels of data with the associated code comprises:
>
> modulating control data with a first code to produce a first stream of modulated symbols; and
>
> modulating a user first channel encoded data with a second code to produce a second stream of modulated symbols.

Modulating as claimed is not performed in Dahlman. The Office Action contends the "modulating each of the plurality of channels of data with the associated code" limitation is shown by modulators 210a-210m in FIG. 2A of Dahlman. Office Action, p. 6. These Dahlman modulators receive frames of "speech or information originating from an information source (not shown)" from framing buffer 220. Dahlman, Col. 5, ll. 53-57.

Claim 1 requires that modulating as claimed comprises *modulating* ***control data with a first code*** *to produce a first stream of modulated symbols* and *modulating a* ***user first channel encoded data with a second code*** *to produce a second stream of modulated symbols*. The Office Action contends this modulating is shown by FIG. 2B, specifically "a modulator 280 configured to modulate either control data of bits derived from a QPSK [CPSK] modulator 270 with a first code ***and/or*** a user channel encoded data derived from a

convolutional encoder 230 with a second code…" Office Action, p.7 (emphasis added). Use of "and/or" here implies uncertainty as to what in FIG. 2B correlates to the express language of claim 1. However, what is clear is that these elements of FIG. 2B of Dahlman do not show modulating control data with a first code and modulating a user first channel encoded data with a second code as claimed.

Dahlman's convolutional encoder 230 does not modulate anything with a first or second code, and particularly does not modulate control data or user channel encoded data with a first or second code. As noted above, data received from framing buffer 220 is frames of speech or information, not control data or first channel encoded data as claimed. Further, Dahlman in FIG. 2B fails to modulate with any code, let alone control data with a first code and user first channel encoded data with a second code. Convolutional encoder 230 receives the sum of information frames from framing buffer 220 and first overhead bits (x_1 bits per frame), but does not modulate the received information with a code, and further, such information is not control data. To the extent a "code" is shown in FIG. 2B, it is the "short code from short code generator," and no "first code" and "second code" is shown by the Dahlman design in the claimed arrangement.

Further, while multiple modulators 210a-210m are shown in Dahlman, the fact that the short code may be provided to each one of the multiple modulators still does not satisfy the claimed limitations – no modulating of control data with a first code and user channel encoded data with a second code is shown by Dahlman.

In short, while FIG. 2B has certain remote similarity to the wording employed in the present claims, in actuality the Dahlman design fails to show "modulating control data with a first code … and … modulating a user first channel encoded data with a second code…" in the manner claimed. Applicants therefore submit that claim 1 is not anticipated by Dahlman.

Independent claims 18 and 35 include similar limitations. Claim 18 recites "a first modulator configured to modulate *control data with a first code* … and a second modulator configured to modulate a user *first channel encoded data with a second code*

..." Claim 35 recites "means for modulating control data with a first code ... and ... means for modulating a user first channel encoded data with a second code ..." As discussed above, the Dahlman reference fails to operate in the manner claimed. As a result, claims 18 and 35 are not anticipated by Dahlman.

Claims depending from independent claims 1, 18, and 35 are allowable as they include limitations not found in the cited references, alone or in combination. As a result, all claims as amended are novel and nonobvious in view of the cited references.

Double Patenting

The Office Acton rejected claims 1, 4, 10, 12, 16-18, 21, 27, 29, and 33-35 on the grounds of nonstatutory obviousness-type double patenting based on claims 1-4 of U.S. Patent No. 5,926,500, and claims 1-4 of U.S. Patent No. 5,930,230.

Applicants file herewith a terminal disclaimer in compliance with 37 C.F.R. §1.321 to overcome these nonstatutory double patenting rejections. Applicants respectfully submit that this terminal disclaimer overcomes these grounds for rejection.

CONCLUSION

In view of the foregoing, it is respectfully submitted that all claims of the present application are in condition for allowance. Reexamination and reconsideration of all of the claims are respectfully requested and allowance of all the claims at an early date is solicited.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Applicants believe that no fees are due in accordance with this Response beyond those included herewith. Should any fees be due, the Commissioner is hereby authorized to charge any deficiencies or credit any overpayment to Deposit Account No. 17-0026.

Respectfully submitted,

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